

CLAIMS

What is claimed is:

1. A method of detecting asymmetric dimethylarginine (ADMA) in a sample comprising ADMA, symmetric dimethylarginine (SDMA), and arginine, the method comprising the steps of:

a) contacting a sample with an α -dicarbonyl compound, wherein said sample is suspected of containing ADMA and at least one of SDMA and arginine, said contacting resulting in modification of the guanidino nitrogens of SDMA and the guanidino nitrogens of arginine, to produce modified SDMA and modified arginine;

b) detecting ADMA in the sample.

2. The method of claim 1, wherein said α -dicarbonyl compound is phenylglyoxal.

3. The method of claim 1, further comprising the step of modifying the α -amino group of SDMA, ADMA, and arginine before the step of modifying the guanidino nitrogens of SDMA and the guanidino nitrogens of arginine.

4. The method of claim 3, wherein the α -amino group is modified with a dye that provides a detectable signal.

5. The method of claim 1, wherein said detecting step comprises contacting the sample with an antibody that binds specifically to dimethylarginines, wherein said antibody does not bind to the modified SDMA.

6. The method of claim 1, wherein said detecting step comprises contacting the sample with an antibody that binds specifically to ADMA.

7. The method of claim 5, wherein the antibody is detectably labeled.

8. The method of claim 1, wherein said ADMA is detected by high performance liquid chromatography.
9. The method of claim 1, wherein said ADMA is detected by capillary electrophoresis.
10. An antibody that binds specifically to asymmetric dimethylarginine.
11. The antibody of claim 10, wherein said antibody is detectably labeled.
12. An antibody that binds specifically to modified symmetric dimethylarginine (SDMA), wherein the guanidino nitrogens of the SDMA are modified by reaction with an α -dicarbonyl compound.
13. A kit for detecting asymmetric dimethylarginine (ADMA) in a sample, the kit comprising:
 - an α -dicarbonyl agent that modifies the guanidino nitrogens of SDMA and the guanidino nitrogens of arginine; and
 - an antibody that binds to ADMA.
14. The kit of claim 13, further comprising an antibody that binds α -dicarbonyl-modified SDMA, and an antibody that binds α -dicarbonyl-modified L-arginine.